

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
27 October 2005 (27.10.2005)

PCT

(10) International Publication Number  
**WO 2005/101581 A1**

(51) International Patent Classification<sup>7</sup>: **H01R 12/12**

**Hiroyuki [JP/JP];** 8-8, Minami-Hashimoto 3-chome,  
Sagamihara-shi, Kanagawa 229-1185 (JP).

(21) International Application Number:  
PCT/US2005/008559

(74) **Agents: GOVER, Melanie, G. et al.;** Office of Intellectual  
Property Counsel, Post Office Box 33427, Saint Paul, MN  
55133-3427 (US).

(22) International Filing Date: 14 March 2005 (14.03.2005)

(25) Filing Language: English

(81) **Designated States (unless otherwise indicated, for every  
kind of national protection available):** AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG,  
KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG,  
MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH,  
PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.

(26) Publication Language: English

(30) Priority Data:  
2004-108998 1 April 2004 (01.04.2004) JP

(71) **Applicant (for all designated States except US): 3M IN-  
NOVATIVE PROPERTIES COMPANY [US/US];** 3M  
Center, Post Office Box 33427, Saint Paul, MN 55133-  
3427 (US).

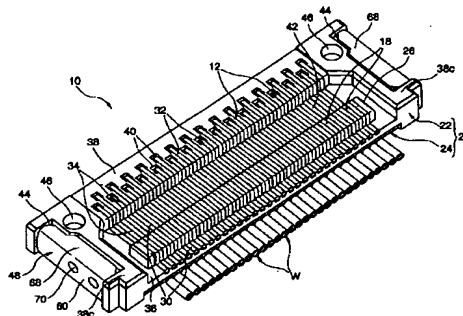
(84) **Designated States (unless otherwise indicated, for every  
kind of regional protection available):** ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),

(72) Inventor; and

(75) **Inventor/Applicant (for US only): MATSUOKA,**

[Continued on next page]

(54) **Title:** CONNECTOR AND LINE CONNECTING METHOD THEREOF



(57) **Abstract:** To reduce as much as possible an outer size of a connector having an insulation-displacement type wire connection structure without deteriorating stability and reliability of connection between terminal elements and conductors. A connector (20) includes a plurality of terminal elements each having insulation-displacement type conductor-connecting sections (14) to be connected to a wire conductor and a contact section brought into electric contact with corresponding terminal elements of a counterpart connector and an electrically insulating body (20) for exposing the individual contact sections and supporting the terminal elements (12). The body (20) comprises a first support member (22) for supporting the terminal elements (12) and a second support member (24) for supporting a plurality of wires W. The first support member (22) has a fitting portion (26) for positioning the coTo reduce as much as possible an outer size of a connector having an insulation-displacement type wire connection structure without deteriorating stability and reliability of connection between terminal elements and conductors. A connector (20) includes a plurality of terminal elements each insulation-displacement type conductor-connecting sections (14) to be connected to a wire conductor and a contact section brought into electric contact with corresponding terminal elements of a counterpart connector and electrically insulating body (20) for exposing the individual contact sections and supporting the terminal elements (12). The body (20) comprises a first support (22) for supporting the terminal elements (12) and second support member (24) for supporting a plurality of wires W. the first support member (22) has a fitting portion (26) for positioning the contact sections (18) of the terminal elements (12) to the corresponding terminal elements of the counterpart connector and fitting them to the connection counter connector. The conductor-connecting section and the contact section of each terminal element (1) are aligned and arranged in a direction intersecting a connector fitting direction defined by the fitting portion (26).

WO 2005/101581 A1



European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**Published:**

— *with international search report*